

REMARKS/ARGUMENTS

Claims 1, 2, 6-9, 13-16, 20-23, 27 and 28 have been amended. No Claims have been cancelled without prejudice. No Claims have been added.

35 U.S.C. § 102(b) Rejections

Examiner rejected claims 1-28 under 35 U.S.C. § 102(b) as being anticipated by Cooper et al., (hereinafter "Cooper") entitled "Enhanced Code Compression for Embedded RISC Processors." The Applicant respectfully disagrees and submits the following argument in defense of his position.

Cooper, as understood by the Applicant is directed to conventional repeat replacement compression, as described in paragraph 3 in the background section of the present application. Cooper discusses methods of finding identical segments of register level assembly code instructions, and replacing them with a procedure call or a cross-jump to a single instance of the repeated code.

In contrast, claim 1 – as amended – requires "identifying a plurality of fork subgraph structures within a graph structure constructed for a plurality of executable instructions." Cooper does not teach or suggest constructing the kind of graph from which fork subgraphs can be identified. Cooper discusses a suffix tree used for pattern matching, but a tree structure is not a graph structure and does not have the kind of forks necessary for alpha/omega motion performed on the tines of the fork subgraphs.

The Examiner cites the interference graph discussed in Cooper to teach the fork subgraphs. The interference graph is a table structure that shows which registers are used simultaneously. It does not have tines and handles, thus it

does not have fork subgraphs. The present invention also uses an interference matrix, though in a somewhat different manner.

Cooper also does not teach or suggest “identifying a plurality of unifiable variables within each fork subgraph structure of said plurality of fork subgraph structures, which are not simultaneously used in said plurality of executable instructions,” as required by claim 1. The instructions taught in Cooper are register level assembly instructions. Thus, they do not have variables in the sense of the word as it is used in claim 1. Variables are higher-level abstract values, whereas registers are lower level memory locations. Cooper discusses abstracting and renaming registers to aid compression. However, Cooper does not teach or suggest identifying unifiable variables, in the manner required by claim 1.

Because of the fundamental differences described above, Cooper also does not teach or suggest “transferring at least one unifiable instruction of said plurality of executable instructions from a tine of a corresponding fork subgraph structure of said plurality of fork subgraph structures to a handle of said corresponding fork subgraph structure, said at least one unifiable instruction containing at least one unifiable variable of said plurality of unifiable variables,” since Cooper already failed to teach many of the component required in this required element. Therefore, claim 1 is allowable over Cooper. Furthermore, dependent claims 2-7 that depend on allowable independent claim 1 adding further limitation are thus also allowable.

Independent claim 8 contains limitations similar to those of allowable claim 1. Therefore, claim 8 and all claims dependent on claim 8 are also allowable. Similarly, independent claim 15 contains limitations similar to those of allowable claim 1. Therefore, claim 15 and all claims dependent on claim 15 are also allowable. Finally, independent claim 22 contains limitations similar to

those of allowable claim 1. Therefore, claim 22 and all claims dependent on claim 22 are also allowable.

CONCLUSION

Applicants respectfully submit the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Adam Furst at (408) 947-8200.

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

A handwritten signature in black ink, appearing to read 'Adam Furst', is written over a horizontal line.

Date: January 31, 2005

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